1.0 Introduction

After the record-breaking wildfire season of 2000, Congress approved funds for federal and state agencies and local communities to develop and implement a national strategy for preventing the loss of life and negative impacts to natural resources, private property and livelihoods. The result of that planning and preparation is commonly known as the "National Fire Plan" (NFP) (U.S. Department of Agriculture [USDA] 2002). This plan was approved in September 2000 and is fully titled *Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President in Response to the Wildfires of 2000*. The NFP includes five key points: firefighting preparedness, rehabilitation and restoration of burned areas, reduction of hazardous fuels, community assistance, and accountability. In 2001, Congress released another directive requiring the Departments of Agriculture and the Interior to engage Governors in the development of a National ten-year comprehensive strategy that would implement the NFP. For this effort, the *Idaho Statewide Implementation Strategy for the National Fire Plan* (Kempthorne et al. 2002) was developed. It was approved in May 2002 and involved cooperation and collaboration of the Secretary of Interior, the Secretary of Agriculture, the Governors of Montana, Wyoming, Idaho, and Oregon, and the Director of the Council on Environmental Quality. The primary goals of the Idaho Plan are to improve prevention and suppression of wildfire, reduce hazardous fuels, restore fire-adapted ecosystems, and promote community assistance.

1.1 Purpose

The purpose of the mitigation plan presented in this report is to identify and mitigate wildfire risks and negative consequences in communities and Wildland Urban Interface areas of Cassia County, Idaho, in accordance with the *Idaho Statewide Implementation Strategy for the National Fire Plan*. The Wildland Urban Interface is defined as the residential and supporting commercial land uses intermingled with range commercial uses and wildlands.

Cassia County proposes to reduce the hazard of wildland fire within seven fire protection districts and three open (unprotected) areas (Figure 1). The benefit of the reduction of fuels, public education, and training the community on fire protection and prevention is a reduction in frequency of wildfires spreading from city or private property on to public lands and a reduction in wildfires spreading from public lands to municipal and private property.

2.0 General Description of Assessment Area

Cassia County is predominately made up of rural areas, although the northern part of the county around the County seat of Burley has experienced major development. Development in the County has mostly occurred along Highway 30, the Eastern Idaho Railroad (EIRR), the Snake River, and Interstate Highway 84. The primary industrial complex has developed along the EIRR from the Twin Falls County line and Declo west and east of Burley and south to 1000 South where the railroad presently ends. Most of the industries are related to

agriculture products, their production, harvest or shipping. The south end of the county provides commercial quarries of building stone. These quarries are currently outside the Fire Protection Districts within the county. Some of the quarries provide residential housing for their employees within the quarry property.

The main urban centers that have developed within Cassia County are Burley, Declo, Oakley, Albion, Malta, Elba, and Almo; while other early settlements, such as Connor, Jackson, Artesian City, Marion, Mouton, Strevell, Bridge, Naf, Idahome, Raft River, Heglar and Sublette have ceased to exist or are very small communities or clusters of homes.

The very rural aspect of the county has determined the way the county is presently developing. The irrigation systems used in agriculture areas have serviced to break-up the wildland and human created fuels, and has created a different fuel complex with its unique potential fire problems.

2.1 Landownership

Cassia County is Idaho's eighth largest county (land mass) in Idaho and contains approximately 1.6 million acres divided among five landowners (Table 1 and Figure 1).

Table 1. Land Status of Cassia County, Idaho

Owner	Acres	Percent
USFS	394,282	24
USFWS	7,378	<1
BLM	472,936	29
State of Idaho	50,885	3
Private	715,457	44
Total	1,640,938	100

2.2 Population and Demographics

At the 2000 census, there were 21,416 people, 7,060 households, and 5,485 families residing in Cassia county. The population density is approximately eight persons per square mile. There are 7,862 housing units at an average density of three units per square mile. In general the population density is light throughout the county with the densest populations occurring in the towns and communities. Due to farming and ranching there are several individual home sites scattered across throughout the rural areas of the county.

Table 2. Populations of major cities in Cassia County, Idaho

Major Cities – Cassia County, Idaho	2000 Population Census
Albion	262
Burley	9,316
Declo	338
Malta	177
Oakley	668

Cassia County Land Ownership and County Roads

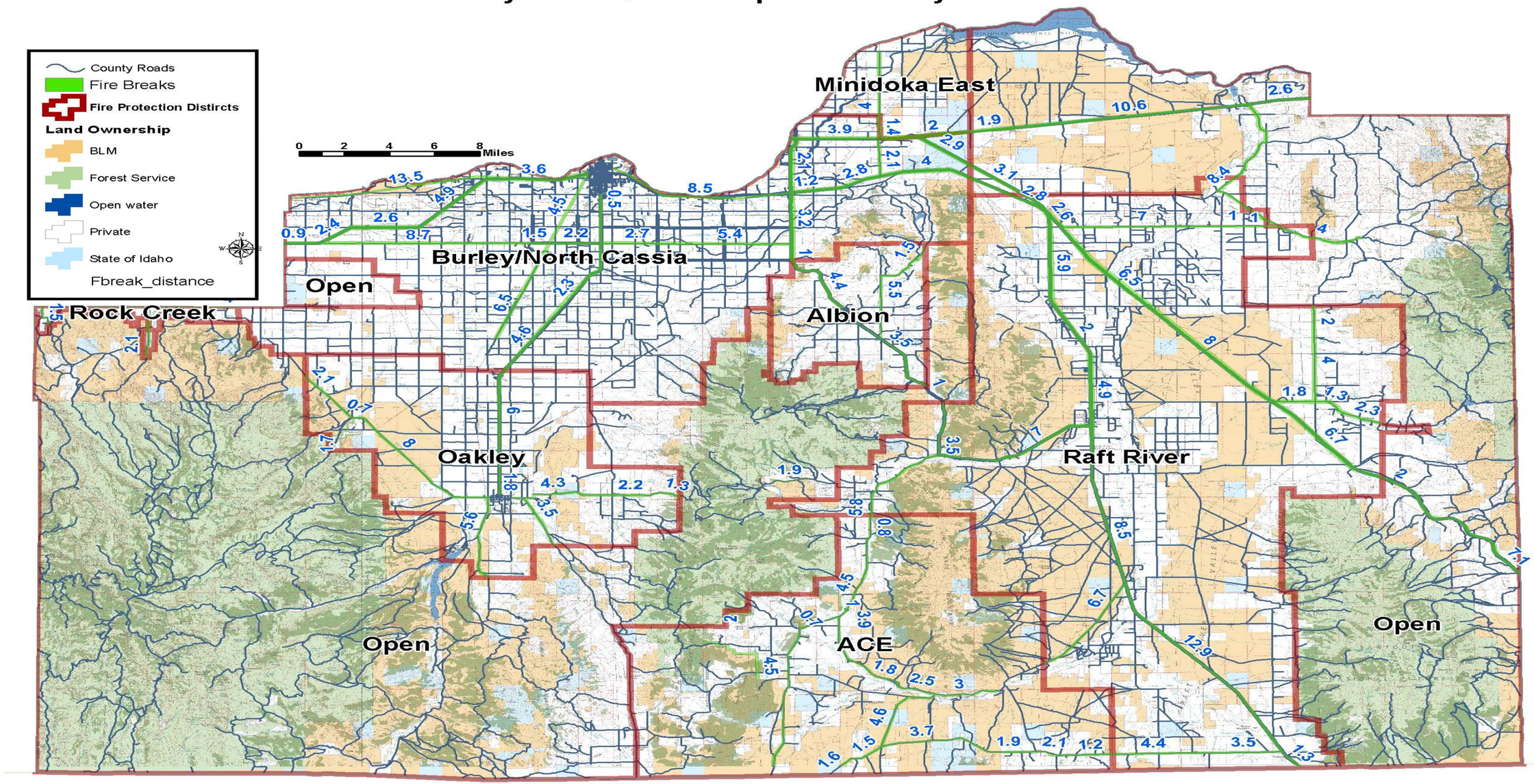

Figure 1. Cassia County land ownership and county roads.

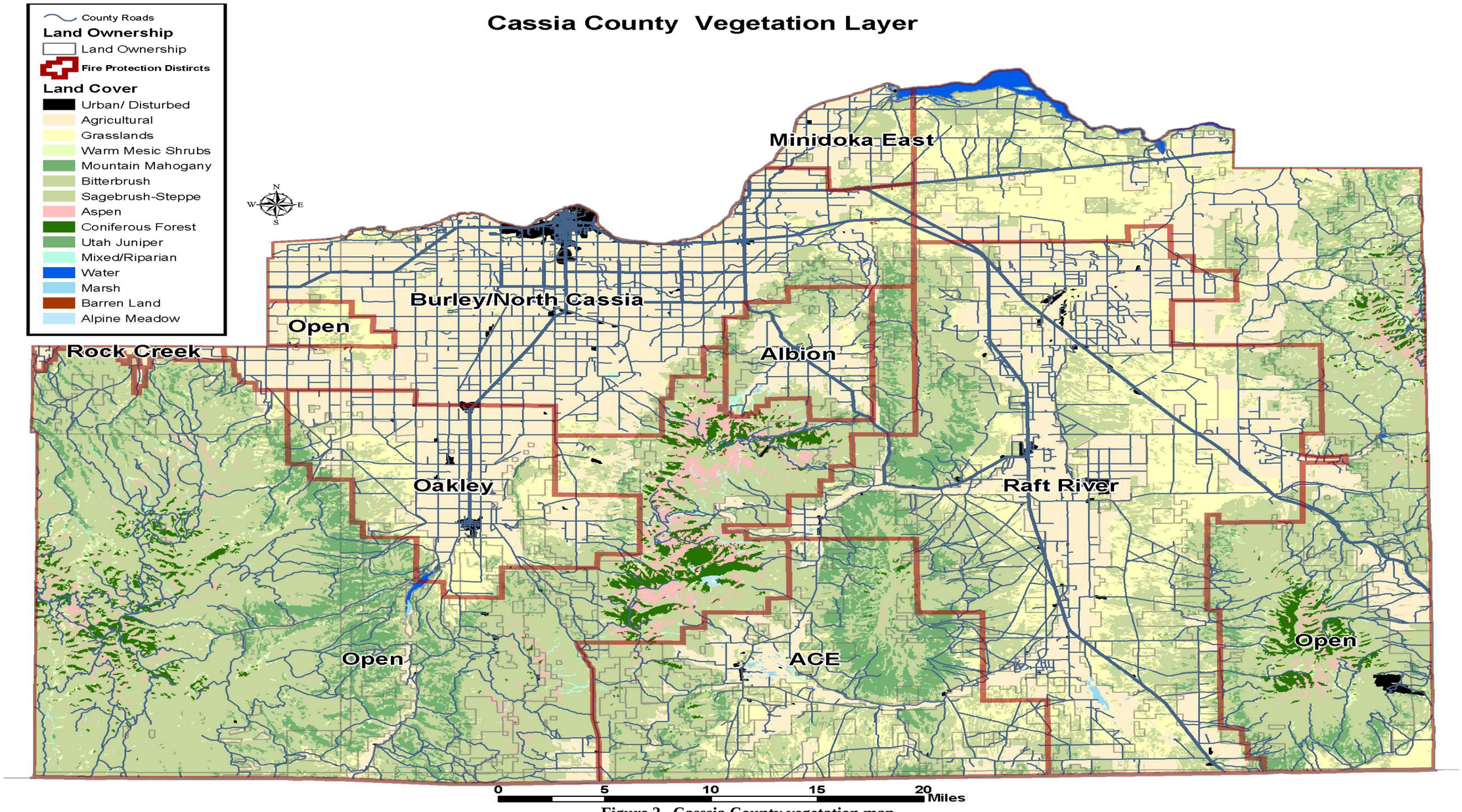

Figure 2. Casssia County vegetation map.

2.3 Topography and Vegetation

The topography of Cassia County is primarily high mountain desert with elevations ranging from 4,100 feet in the valley bottoms, where the topography is flat or gently rolling, to 8,048 feet in the mountainous areas, which are characterized by steep slopes and narrow canyons (Figure 2). Some of the more common plant species found in Cassia County include Wyoming big sagebrush (*Artemisia tridentata* spp. *wyomingensis*), green rabbitbrush (*Chrysothamnus viscidiflorus*), greasewood (*Sarcobatus vermiculatus*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber's needlegrass (*Achnatherum thurberianum*), Sandberg bluegrass (*Poa secunda*), arrowleaf balsamroot (*Balsamorhiza sagittata*), Indian ricegrass (*Achnatherum hymenoides*), some pinyon pine (*Pinus cembroides*), and juniper (*Juniperus scopulorum*). Much of the rangeland is comprised of crested wheatgrass (*Agropyron cristatum*) seedings with halogeton (*Halogeton glomeratus*) and cheatgrass (*Bromus tectorum*) dispersed along roadways and disturbed sites. At the higher elevations, juniper is encroaching along with other conifers such as Douglas fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), subalpine fir (*Abies lasiocarpa*), and spruce (*Picea* spp.) on north aspects and along steeper canyon bottoms.

2.4 Climate

Climate in Cassia County is relatively mild compared with much of the surrounding counties. Summers may begin with a sudden change to warm and dry weather around the first of June during the day, but chilly nights may persist into July. Showers and thunderstorms are common producing localized precipitation. Afternoon temperatures occasionally rise into the low 90's, but nighttime temperatures are usually in the 50's. The fall brings cooler weather with daytime temperature rarely exceeding the 70's and dipping into the 40's by mid November, but remaining dry. The winter conditions usually arrive between late November and Christmas with the first cold wave. While cold temperatures may hover around zero or sub-zero during the winter, these severe temperatures seldom persist for long periods. Snowfall adds moisture to the higher elevations during winter months and may accumulate to depths of several feet on the lower benches and bottomlands.

Tables 3, 4 and 5 summarize long-term climatic data for Burley, Oakley, and Malta. Data from these weather stations provide a good cross-section of Cassia County weather patterns. Annually, the data compare favorably with the exception of Malta, which received nearly half the total snowfall compared to the other two stations. Monthly, the total precipitation is variable among stations with Burley receiving the least total precipitation during months July through October, which is considered the fire season for Idaho.

Table 3. Monthly Climate Summary for Burley, Idaho for years 1948 to 2003

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	35.8	42.1	50.5	59.8	68.9	78.1	87.4	86.1	76.2	63.8	48.0	37.6	61.2
Average Min. Temperature (F)	18.2	22.6	27.7	33.6	41.4	48.2	54.1	51.8	43.3	34.0	26.2	19.7	35.1
Average Total Precipitation (in.)	1.18	0.78	0.92	0.95	1.22	0.87	0.34	0.46	0.57	0.61	0.95	1.05	9.91
Average Total SnowFall (in.)	6.9	3.8	2.5	1.2	0.2	0.0	0.0	0.0	0.0	0.2	2.4	5.8	23.0
Average Snow Depth (in.)	2	1	0	0	0	0	0	0	0	0	0	1	0

Table 4. Monthly Climate Summary for Oakley, Idaho for years 1914 to 2003

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	37.8	43.0	50.6	59.5	68.4	77.2	86.2	85.1	75.7	64.4	49.1	39.8	61.4
Average Min. Temperature (F)	18.8	23.1	27.6	33.3	40.4	47.1	54.8	53.1	44.6	36.0	27.4	20.7	35.6
Average Total Precipitation (in.)	0.77	0.65	0.89	1.23	1.54	1.22	0.72	0.74	0.77	0.82	0.76	0.78	10.89
Average Total SnowFall (in.)	7.2	4.4	4.0	2.1	0.5	0.0	0.0	0.0	0.0	0.4	2.9	5.6	27.1
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. Monthly Climate Summary for Malta, Idaho for years 1963 to 2002

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	37.0	42.8	51.7	61.0	69.6	79.1	88.9	87.9	77.6	65.1	48.1	37.7	62.2
Average Min. Temperature (F)	16.8	20.7	26.2	31.5	37.9	43.7	49.8	48.1	40.0	31.5	24.1	16.5	32.2
Average Total Precipitation (in.)	0.72	0.58	0.86	1.09	1.64	1.23	0.93	0.89	0.84	0.72	0.76	0.74	11.01
Average Total SnowFall (in.)	4.1	1.7	1.6	0.7	0.4	0.0	0.0	0.0	0.0	0.1	1.5	3.1	13.1
Average Snow Depth (in.)	2	1	0	0	0	0	0	0	0	0	1	2	1

3.0 Existing Conditions and Resources

This section identifies important wildland fire-related issues and their relationship to existing conditions in Cassia County. Existing conditions in Cassia County were determined by: (1) interviewing local, state, and federal employees and county residents; (2) driving the main roads within each fire district; (3) inspecting fuel loads adjacent to roads and calculating the distance this fuel occurred along the road; (4) evaluating road surface conditions, bridge weight limits, and road classifications for accessibility by large firefighting equipment such as tenders and pump trucks; (5) photographing representative structures and visually checking these structures for fire hazard and safety, including defensible space, location of propane tanks, proximity of fire hydrants and/or water sources, ingress and egress, and type of siding and/or roofing material; and (6) completing a Wildland Fire Hazard Assessment, Structural Assessment, and Community Assessment Form at specific locations within each fire district. Structures were selected based on but not limited to: (a) proximity to a wildland-urban interface, and (b) exhibiting a fire hazard and safety concern such as adjacent to highly flammable sources (e.g., large fields, vacant lots) or flammable material within 10 feet of the structure. Structures were defined as homes and other buildings (e.g., barns, garages, or maintenance buildings) with economic value to the landowner, or historic buildings.

3.1 Risk of Fires and Fire Frequency

The risk of wildfires within or adjacent to Cassia County is generally moderate to high due to an accumulation of flammable fuels over the past decade. Cool wet springs have increased grass and shrub density within the sagebrush-steppe and persistent drought has led to a moderate to high fire danger. Figure 3 shows fuel loads and historical fire perimeters for years (1972-2002). The highest fire frequency occurred in the extreme northern edge of the county and almost entirely on BLM lands. This area is currently not in a Fire Protection District.